

AMENDMENTS TO THE SPECIFICATION

Please replace paragraph 14 with the following amended paragraph:

[14] Figure 1 is a side perspective view of a guide-in-guide catheter system in accordance with an embodiment of the present invention. In Figure 1, an outer catheter 11 is fluidly coupled to a flushing line 12. This outer catheter 11 has an inner duct or channel 16 that, as can be seen, contains a middle catheter 13. This middle catheter 13, a steerable catheter in this embodiment, has an inner duct or channel 17 and contains a plurality of flushing orifices 15 that are sized to allow fluid to pass through them. Located within the inner channel 17 of the middle catheter 13 is an inner catheter 14, which may be an injection catheter. This inner catheter 14 may be used to perform numerous procedures including therapeutic delivery and tissue sampling.

Please replace paragraph 19 with the following amended paragraph:

[19] Figure 2 is a side perspective view of an LVS catheter 21 in accordance with an alternative embodiment of the present invention. Visible in Figure 2 are the various sections 23, 24, 25, 27, 28, 29, 209, 202, 203 and 204 ~~labeled 23 through 29, and 201 through 204~~ of the LVS catheter 21. These sections differ in hardness from one another with hardnesses ranging from 30D (durameter) to 82D (durameter). Also visible in Figure 2 is a flushing line 22 coupled to the LVS catheter 21 and entrance and exit orifices 26 and 205.

Please replace paragraph 22 with the following amended paragraph:

[22] In an alternative embodiment, the sections may not be as clearly defined with the hardness simply decreasing and then increasing and then decreasing again, in a more continuous

fashion, when traveling from the entrance orifice 26 to the exit orifice 205. It is preferable, in this embodiment, that the curved section, (sections 27, 28, 29 and through 201) be generally harder than the areas directly surrounding it, (sections 202, 203, 204 and sections 25 and 24). An advantage of this configuration is that when a steerable catheter is guided through the LVS catheter 21, the curved portion, sections 27, 28, 29 and 201, will be better suited to re-direct the steering catheter as it is urged through the LVS catheter 21.

Please replace paragraph 24 with the following amended paragraph:

[24] However, other sizes and cross-sectional configurations may also be used. This would include oval, stellate, rectangular or semi-circular cross-sections. Moreover, while sections 27, 28, 29 ~~27 through 29~~ and 201 are described as having different hardness ratings, these four sections may have the same hardness rating in a different embodiment.

Please replace paragraph 26 with the following amended paragraph:

[26] As shown in Figure 7 ~~4~~, the steering guide catheter 31 may be inserted into an outer catheter during the performance of a medical procedure. In certain situations it is preferable to have the steering guide catheter 31 pre-shaped into a form that will more easily provide access to the target area sought to be worked on.

Please replace paragraphs 35-36 with the following amended paragraphs:

[35] Figure 7 is a side view of an inner and outer catheter in accordance with a preferred alternative embodiment of the present invention. In Figure 7 a flushing line 72 is fluidly coupled to outer catheter 74. This outer catheter 74 contains an inner catheter 70 that has a plurality of

flushing orifices 75. The direction of flushing fluid traveling in this system is depicted by arrows 73. As can be seen in the figure, flushing fluid traveling down the flushing line 72 enters the outer catheter 74 and then travels into the inner catheter 70 through the flushing orifices 75. Consequently, in this configuration, as with the above configuration, only a single flushing line may be required to flush both the inner and outer catheters in the system. In the embodiments of both Figure 6 and Figure 7, the outer catheter 64, 74 may be an LVS catheter while the inner catheter 60, 70 may be a steering guide catheter.

[36] The therapeutic that may be deployed using the systems of the present invention can include numerous available therapeutics including pharmaceutically active compounds, proteins, cells, oligonucleotides, ribozymes, anti-sense oligonucleotides, DNA compacting agents, gene/vector systems (i.e., any vehicle that allows for the uptake and expression of nucleic acids), nucleic acids (including, for example, recombinant nucleic acids; naked DNA, cDNA, RNA; genomic DNA, cDNA or RNA in a non-infectious vector or in a viral vector and which further may have attached peptide targeting sequences; antisense nucleic acid (RNA or DNA); and DNA chimeras which include gene sequences and encoding for ferry proteins such as membrane translocating sequences (“MTS”) and herpes simplex virus-1 (“VP22”) (“VP22”)), and viral, liposomes and cationic and anionic polymers and neutral polymers that are selected from a number of types depending on the desired application. Non-limiting examples of virus vectors or vectors derived from viral sources include adenoviral vectors, herpes simplex vectors, papilloma vectors, adeno-associated vectors, retroviral vectors, and the like. Non-limiting examples of biologically active solutes include anti-thrombogenic agents such as heparin, heparin derivatives, urokinase, and PPACK (dextrophenylalanine proline arginine

chloromethylketone); antioxidants such as probucol and retinoic acid; angiogenic and anti-angiogenic agents and factors; agents blocking smooth muscle cell proliferation such as rapamycin, angiopeptin, and monoclonal antibodies capable of blocking smooth muscle cell proliferation; anti-inflammatory agents such as dexamethasone, prednisolone, corticosterone, budesonide, estrogen, sulfasalazine, acetyl salicylic acid, and mesalamine; calcium entry blockers such as verapamil, diltiazem and nifedipine; antineoplastic / antiproliferative / anti-mitotic agents such as paclitaxel, 5-fluorouracil, methotrexate, doxorubicin, daunorubicin, cyclosporine, cisplatin, vinblastine, vincristine, epothilones, endostatin, angiostatin and thymidine kinase inhibitors; antimicrobials such as triclosan, cephalosporins, aminoglycosides, and nitrofurantoin; anesthetic agents such as lidocaine, bupivacaine, and ropivacaine; nitric oxide (NO) donors such as linsidomine, molsidomine, L-arginine, NO-protein adducts, NO-carbohydrate adducts, polymeric or oligomeric NO adducts; anti-coagulants such as D-Phe-Pro-Arg chloromethyl ketone, an RGD peptide-containing compound, heparin, antithrombin compounds, platelet receptor antagonists, anti-thrombin antibodies, anti-platelet receptor antibodies, enoxaparin, hirudin, Warfarin sodium, Dicumarol, aspirin, prostaglandin inhibitors, platelet inhibitors and tick antiplatelet factors; vascular cell growth promoters ~~promoters~~ such as growth factors, growth factor receptor antagonists, transcriptional activators, and translational promoters ~~promoters~~; vascular cell growth inhibitors such as growth factor inhibitors, growth factor receptor antagonists, transcriptional repressors, translational repressors, replication inhibitors, inhibitory antibodies, antibodies directed against growth factors, bifunctional molecules consisting of a growth factor and a cytotoxin, bifunctional molecules consisting of an antibody and a cytotoxin; cholesterol-lowering agents; vasodilating agents; agents which interfere with endogenous vasoactive ~~endogenous vasoactive~~ mechanisms; survival genes which

protect against cell death, such as anti-apoptotic Bcl-2 family factors and Akt kinase; and combinations thereof. Cells can be of human origin (autologous or allogenic) or from an animal source (xenogeneic), genetically engineered if desired to deliver proteins of interest at the injection site. The delivery mediated is formulated as needed to maintain cell function and viability.

Please replace paragraph 40 with the following amended paragraph:

[40] While various embodiments have been described above, other embodiments of the present invention are also plausible. For example, while a single flushing line ~~42~~ is shown supplying flushing fluid to the various embodiments presented above, two flushing lines may be used. Moreover, while no optical or sensory equipment has been described with any of these catheters, either optical and sensory equipment may be displaced through the catheters as required by the particular medical procedures being performed to assist the practitioner during the procedure.